



City of Annapolis

DEPARTMENT OF NEIGHBORHOOD & ENVIRONMENTAL
PROGRAMS

160 DUKE OF GLOUCESTER STREET, ROOM 202, ANNAPOLIS, MARYLAND 21401

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Chartered 1708

June 28, 2013


Alan J. Hyatt, Esq.
Hyatt & Weber, P. A.
Severn Bank Building
200 Westgate Circle, Suite 500
Annapolis, Maryland 21401

RE: Crystal Spring Preliminary Forest Conservation Plan

Dear Mr. Hyatt,

Enclosed are comments regarding the Preliminary Forest Conservation Plan for Crystal Spring, received May 28, 2013, from the Department of Neighborhood and Environmental Programs, the Department of Planning and Zoning, and the Fire Department. Given the size and complexity of the project, the review comments are extensive. Please contact me with any questions or comments.

Sincerely,


Frank Biba, AICP, LEED AP
Chief, Environmental Programs
Dept. of Neighborhood and Environmental Programs
410 263-7946
fjb@annapolis.gov

cc: Mike Mallinoff
Karen Hardwick
Maria Broadbent
Jon Arason
James Eagan
Marshall Breines



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Crystal Spring Preliminary Forest Conservation Plan

1. The City of Annapolis adopted by reference Natural Resources Article Title 5 Subtitle 16 and refers to this regulation as the primary reference when reviewing development proposals for which the Forest Conservation Act applies. COMAR Title 08 Subtitle 19 implements the provisions of the Natural Resources Article Sec.5-1601-1612: Chapter 01 enumerates general provisions; Chapter 02 defines State review and approval of a local program; Chapter 03 is the model forest conservation ordinance; Chapter 04 is the State forest conservation program. COMAR is referred to as a secondary reference, with the understanding that Chapter 03, model forest conservation ordinance, has not yet been incorporated into City regulations. The State Forest Conservation Manual, which is without the force of law, is referred to for guidance where necessary.
2. Total tract area is 111 acres. Developer needs to demonstrate that there will be at least 50% canopy coverage (55.5 a) by the year 2036. The narrative on Sheet 6 under *Tree Canopy* states that the tree canopy coverage will be 56.7 acres by 2036 with no accompanying indication of how that will be attained.
3. Developer must provide hydrogeology of wetlands to be retained to show their continued viability as wetlands.
4. MDE letter of May 30, 2012 from Judy Broersma to McCarthy and Associates references a submittal dated April 9, 2012. Please provide a copy to the City for review along with all associated wetlands documentation from MDE and Army COE.
5. The footprint of the proposed CCRC encroaches into the wetland at the SW corner and does not respect any MDE setback, if applicable, and will certainly alter the hydrology of the wetland to the point where its inviability is assured. In addition, the soils in the area of the wetland may prove to be inappropriate for the proposed foundation support.
6. Priority for retention and protection of on-site resources includes contiguous forest. Regarding the location of the CCRC in a contiguous forest, please show that "reasonable efforts have been made to protect them and the plan cannot be reasonably be altered" (5-1607(c)(1)).
7. Please use the checklist on pages 3-3 and 3-4 of the *State Forest Conservation Technical Manual* (Third Edition, 1997) (*Manual*) to submit a complete preliminary forest conservation plan. Please provide a written justification for any item that is not included and indicate when the item will be submitted.

The following items from the checklist will need to be submitted to constitute a complete preliminary forest conservation plan:

- Environmental features map.
- Location/description of existing forest area
- Priority areas; priority retention areas
- Priority planting areas; specifications/details
- Building restriction lines
- Utility easements, storm water management
- Amended sediment/erosion plan
- Construction sequence
- Demonstration that priority areas cannot be retained
- Planting plan; specifications, site prep, planting schedule w/species, stocking (number, spacing or distribution) size, condition, plant source
- Construction/planting sequence
- Management and monitoring
- Protection
- Reinforcement planting
- Long-term protection; agreement between parties
- Description of allowed activities
- Specifications/details for protection

8. Natural Resources Article §5-1604 (b) (1) states: “The forest stand delineation shall be used during the preliminary review process to determine the most suitable and practical areas for forest conservation.”

The *Manual*, page 2-1, section 2.0 states: “The purpose of a Forest Stand Delineation is to determine the most suitable and practical areas for forest conservation during the preliminary design and review stages of development.”

The May 24, 2013 Crystal Spring preliminary forest conservation plan contains, on sheet 7, a March 2011 site plan. The Crystal Spring forest stand delineation was approved in 2013. Please submit updated sheet.

Therefore, please use all components of the approved FSD including the hydrology analysis, the forest quality analysis, and the natural resources inventory in appendix I, J and K to determine the best areas for retention and protection as per Natural Resources Article §5-1607 (c) and revise the site plan accordingly.

The high priority forest stands and specimen trees shown in the forest quality analysis and the wetlands and buffers/the intermittent stream and buffer/steep slopes shown in the natural resources inventory need to be preserved to the maximum extent possible. Please move development/roads away from these priority areas for retention and protection. Development concentration should be in open space, low and medium quality forest before proposing development in high quality forest.

Please be advised that, based on existing site conditions, a wetland buffer of more than 25' may be required.

Natural Resources Article §5-1607 (c) considers contiguous forest that connects the largest undeveloped or most vegetated tracts of land within and adjacent to the site a priority for retention and protection. Natural Resources Article §5-1607 (d) considers establishing or increasing forested corridors to connect existing forests within or adjacent to the site a priority for afforestation or reforestation. Furthermore, §5-1607 (d) states that forested corridors, where practical, should be a minimum of 300 feet in width to facilitate wildlife movement. Please show the contiguous forest on the preliminary forest conservation plan that is at least 300' wide that may serve as a wildlife corridor where practical.

Please use Natural Resources Article §5-1607 (d) in selecting areas for afforestation, reforestation, and replanting.

9. In determining the critical root zone of trees please use the definition used by the *Manual*: "... For the purpose of this manual, critical root zone is one foot of radial distance for every inch of tree diameter (DBH) measured at 4.5 feet above the ground, with a minimum radius of 8 feet. For specimen trees the critical root zone shall be 1.5 feet for every inch of tree diameter."

The *Manual*, page 3-26, under Critical Root Zone Protection, states: "When 30% or less of a Critical Root Zone in a Forest Retention Area is disturbed by clearing, grading, or construction, the following additional protection measures will be required unless waived by the approving authority." The additional protection measures include root pruning, crown reduction or pruning, watering, aeration, matting, fertilizing, mulching, tree removal by arborist, and other measures as needed. Please include in the FCP specifications for pre-construction stress reduction as well as a five year maintenance and monitoring agreement (as per the *Manual*, page 3-45/46) for trees within 15' of the LOD.

The *Manual*, page 3-27, under Post Construction Measures, states: "When more than 30 percent of the Critical Root Zone is disturbed by grading, clearing or construction, the FCP and Retention Area calculations will require modifications to reflect the disturbances and show that these are no longer acceptable as Forest Retention Areas." The LOD will need to be staked out in the field. The LOD will need be field verified by City staff and representatives of the developer (licensed arborist, landscape architect, civil engineer, and possibly contractors). Trees within 15' (more if needed) of the LOD will be evaluated based on the type of species and size, the percentage disturbance of the critical root zone, the health of the tree, environmental stresses, and other factors to determine whether the tree will be preserved. Appropriate tree preservation measures will include, but not be limited to, root pruning, crown reduction or pruning, watering, fertilizing, mulching, and tree removal by arborist. The LOD will have to be adjusted on all the plans prior to approval based on the site visit.

The forest conservation worksheet on sheet 2 shows the break even point as 33.72 acres and that 33.80 acres of forest will be retained on site.

Preserved trees within 15' of the LOD will typically be under a lot of stress and quite often will not survive. The preliminary FCP shows that 6.20 acres of the forest conservation areas are within 15' of the LOD. As a rule of thumb 50% of the trees in those areas will not survive. Therefore, an additional 3.10 acres of forest conservation area will need to be preserved in order to meet the break even point. If the development footprint changes, then the additional acreage will be recalculated.

10. Please include the following as part of the maintenance and monitoring agreement: A semi-annual forest conservation area report must be prepared by a qualified professional for 5 years from the date of completion of the development project. The report must contain an overview of the maintenance performed in the previous six month, an overview of the maintenance proposed for the upcoming six month, a work log, and pictures of the condition of the FCEA. The report needs to particularly focus on control of invasive species, preservation of trees within 15' of the LOD, newly planted trees, and solutions to problems that arise in the FCEA. The report must be submitted to the Department of Neighborhood and Environmental Programs and the Planning and Zoning Department.

11. Information pertaining to priority areas for retention and protection, as per the approved Forest Stand Delineation and as per Natural Resources Article §5-1607 (c), has not been sufficiently used to determine the areas for development that minimize the impact on such priority areas. Once this has been done the forest clearing justifications will need to be rewritten and will subsequently be reviewed by City staff.

The forest clearing justifications need to clearly conform with Natural Resources Article §5-1607 (c) and page 3-5/6 of the *Manual*.

Some general comments pertaining to the forest clearing justifications:

- a. Natural Resources Article §5-1607 (c) Priority for retention and protection (1) (ii) states: "Contiguous forest that connects the largest undeveloped or most vegetated tracts of land within and adjacent to the site." Please eliminate the language pertaining to contiguous forest and the *Manual*.
- b. Please use the information in the approved FSD to determine the best areas for preservation and adjust the site plan and forest clearing justifications accordingly.
- c. Voluntary Water quality Improvements to Crab Creek:

Only comments pertaining to the development site will be considered.

- d. Tree Canopy

Section a:

The approved FSD is the primary document that needs to be used to determine the most sensitive areas on the site. Please change the forest clearing justification accordingly.

Please see previous comments pertaining to trees within 15' of the LOD. Please change the forest clearing justification accordingly.

Section b:

The high priority forest stands and specimen trees shown in the forest quality analysis and the wetlands and buffers/the intermittent stream and buffer/steep slopes shown in the natural resources inventory need to be preserved to the maximum extent possible. Please move development/roads away from these priority areas for retention and protection. If any of these areas will be disturbed then justify in detail why they cannot be preserved.

Contiguous forest, as delineated in the approved FSD, needs to be preserved to the maximum extent possible. If contiguous forest will be disturbed then justify in detail why they cannot be preserved.

Section c:

Only comments pertaining to the development site will be considered.

Please use Natural Resources Article §5-1607 (d) in selecting areas for afforestation, reforestation, and replanting and provide detailed information about areas on-site that will be replanted.

12. Sheet 3 uses 1.0' radius per inch dbh in wooded area. Please use the critical root Zone definition in the *Manual* (1.5' radius per dbh for specimen trees). Please provide appropriate preservation areas around all specimen trees that will be preserved
13. Please show all trees (including critical root zones) within 15 ft outside of the LOD, even if on adjacent parcels, that will be impacted by the proposed development.
14. Please show the Natural Resources Inventory as an overlay on the development plans.
15. The forest conservation area in the "Village Green" will need to be staked out in the field to determine if the area can be included in the forest conservation area calculations. The area may be too small for preservation.
16. Please add the appropriate scale to all the submitted plans.
17. All tree protection fencing will need to be 6' high chain link fencing with round metal posts at least every ten feet. Please adjust the tree protection fencing detail accordingly.

18. Please provide more info on the plans regarding all the buildings on site (height, depth). The information will be used to assess the environmental impact of any building on site.

19. On site parking should not exceed the minimum requirements. Please maximize the use of underground parking. Surface parking should not be constructed unless part of a building permit.

20. It is too early in the development review process to consider an FCA Variance Request. Please submit the FCA Variance Request at a later date. Please submit a tree risk assessment form (including pictures) for each specimen tree with any future FCA Variance Request and provide detailed documentation, as required by Natural Resources Article §5-1607 (c) (2), as to why the specimen tree cannot be preserved. City staff will inspect all specimen trees slated for removal. Please identify on the plans and in the field which specimen trees will be removed.

21. Regarding proposed stormwater management:

Please submit concept plans as outlined in the 2000 Maryland Stormwater Design Manual volume I Stormwater Management Criteria in Chapter 5 starting on page 5.10. This includes:

i. A map of all site resources shown in Table 5.1 on page 5.7, which includes

- wetlands
- major waterways
- floodplains
- tidal and non-tidal wetlands
- wetlands of special state concern
- wetland buffers
- stream buffers
- perennial streams
- forests
- forest buffers
- critical areas
- highly erodible soils
- enhanced stream buffers
- topography/slopes
- springs
- seeps
- intermittent streams
- vegetative cover
- soils
- geology
- existing drainage areas

- ii. Field verification from the project engineer of the natural resource map.
- iii. Proposed limits of clearing and grading
- iv. Location of proposed impervious areas in each drainage area
- v. Location of existing and proposed utilities
- vi. Preliminary estimate of stormwater requirements, with calculations supporting the estimated requirements and how they are being met per drainage area.
- vii. Preliminary location of the ESD practices
- viii. Stable conveyance of stormwater at potential outfall locations.
- iv. A narrative that supports the concept and describes how the design will achieve:
 - Natural resource protection and enhancement
 - Maintenance of natural flow patterns
 - Reduction of impervious area through better site design, alternative surfaces and non-structural practices
 - Integration of erosion and sediment controls into the stormwater strategy
 - Implementation of ESD planning techniques and practices to the maximum extent practicable.

22. Submerged gravel wetlands should be located in areas with hydrologic soil groups of C or D, or in areas where there is a high groundwater table, hard pan, or other confining layer to maintain submerged flow conditions. With the placement of the submerged gravel wetland on the rooftop of the main CCRC building parking garage, there could be potential issues with leaking into the parking garage. Additionally, it would not be a good idea to have the submerged gravel wetlands so close to the CCRC building in that pollutant removal is achieved with biological uptake from algae and bacteria in the filtering media.

23. The City's Bicycle Master Plan shows that a 10 ft shared use path will be required along the frontage of the Crystal Spring site along Forest Drive and Spa Road. This path would provide the continuation of the shared use path along Forest Drive that currently exists from Bywater Road to the intersection with Hilltop Lane.



City of Annapolis

DEPARTMENT OF PLANNING AND ZONING

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JON ARASON, AICP
DIRECTOR

June 24, 2013

MEMORANDUM

To: Frank Biba, Chief
Environmental Programs

From: E. Thomas Smith, Jr., RLA
Chief of Current Planning

Re: Crystal Spring Preliminary FCP

Absent a complete FCP with a Natural Resources Inventory (NRI) to guide, delineate and rank potential priority retention areas, a comprehensive/detailed review is premature. The following bullet points reference many of the items discussed in our June 12th meeting:

- The main, six-story, CCRC structure impacts 2 sensitive wetland areas which both appear to drain into the adjacent intermittent stream. Pre & post drainage analysis shall be required to evaluate impacts and thus set the limit of disturbance in and around these wetland areas,
- Large stormwater management ponds appear to impact sensitive areas (forested steep slopes), drainage areas adjacent to the intermittent stream and interfere with proper building location (chapel to be used as a vista/focal point),
- A tree preservation/buffer area adjacent to Forest Drive is nonexistent. The entire buffer is graded and contains stormwater infrastructure. The site plan still does not include the deceleration lane, etc. widening for Forest Drive. Can not evaluate buffer impacts until said widening is shown. A guideline for a minimum preservation, buffer width is 100 ft.,
- I question the specimen tree and forest preservation within the central open/green space. The graphics do not make sense; what is being retained within the narrow graphic yet the LOD is far beyond the narrow graphic. A detailed individual tree inventory should be required for this area. Grading within this area should be designed to the half-foot contour,
- Submerged gravel wetlands appear to conflict with urban plaza areas and are proposed on the rooftop of the main CCRC building parking garage. Please relocate these BMP's to proper infiltration areas or utilize a more structured system in these areas,
- Submerged gravel wetlands encroach into the 100 ft. vernal pool, wetland buffer. These devices appear to capture runoff from both the adjacent street and parking lot. I question the impacts of water volume, pollutants and water temperature on amphibian habitat,

- Within the comprehensive Watershed Analysis, each wetland area and natural drainage area shall be delineated for pre and post construction impacts. Both seasonably high water table and perched surface water should be included and evaluated for impacts. The existing wetlands and drainage areas should be considered within the highest priority ranking for preservation,
- The CCRC apartments in the southwest corner of the property encroach upon the main drainage flow and the natural outfall point for the site. This area was also delineated with high K-factor soils. The private soils report that was performed early on should be utilized in the priority ranking,
- Sheet 7 of 7, May 2013 plan takes significant liberties within the rendering of undisturbed area—either is proposed for clearing or is currently cleared. Further, this site plan does not match that of Sheets 3 and 4,
- Engineering items such as 880 foot long retaining walls, averaging 4' to 10' in height, should be eliminated. Grading, including for gravity-flow sewers, shall be held as close to existing grade as possible, especially along the proposed forest edge and the central green space,
- There are numerous design elements that required modification, such as the relocation of the bypass road (Skipper Drive extended) to align with Gemini Drive, which P&Z will provide comment as the FCP is detailed,
- The submission appears to be incomplete as per 5-1605 of State Natural Resources Article. Priority retention and protection is not followed per 5-1607(c),
- Priority ranking of the site's most sensitive areas to site's least sensitive areas shall be delineated and thus used as a guide for preservation areas versus developable areas,
- Once the application is complete and the preliminary site plan adjusted per the FCA, *Annapolis Comprehensive Plan*, urban tree canopy goals (included mitigation), can the application be evaluated for justification in clearing priority forest and for requested specimen tree variances,
- I suggest that the applicant submit the NRI, with the various wetland analyses, and with the priority rankings for review prior to amending the site plan. Once the ranking of priority preservation areas is properly delineated, then site planning should be designed accordingly to retain these areas.



ANNAPOLIS FIRE DEPARTMENT
Fire Marshal's Office

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June 19, 2013

To: Maria Broadbent, Director
Department of Neighborhoods and Environmental Programs

From: John Menassa, Battalion Chief *JCM*
Fire Marshal

RE: Crystal Spring

In preliminary review and for attachment to your review comments:

1. We note the inclusion of storm ponds and the desire to keep certain forest areas intact. The building code has provisions for increasing the allowable building area based on open perimeter. Trees and ponds that inhibit firefighting operations will not be considered open space in the area around the perimeter of buildings. Section 506 of the IBC spells out the open space calculations we will follow.
2. Plans and specifications for fire hydrant systems shall be submitted to the fire department for review and approval prior to construction.
3. Prior to the delivery of combustible materials and the start of any building construction, the water supply for fire protection shall be acceptable to the AHJ and shall be available.
4. The number and type of fire hydrants and connections to other approved water supplies shall be capable of delivering the required fire flow and shall be provided at approved locations.
5. A 3 foot clear space shall be maintained around the circumference of fire hydrants except as otherwise required or approved.
6. Plans for fire apparatus access roads shall be submitted to the fire department for review and approval prior to construction.
7. The fire department will require access to the site during construction and after occupancy. Key boxes and chain locks are required and supplied through the Knox Rapid Entry System.



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June 19, 2013

Crystal Spring Project page 2.

8. Approved fire department access roads shall be provided for every facility, building or portion of a building hereafter constructed or relocated.
9. Fire department access roads shall consist of roadways, fire lanes, parking lot lanes, or a combination thereof. Road names shall be provided on permanent noncombustible signs and names shall be phonetically distinct.
10. A fire department access road shall extend to within 50 feet of at least one exterior door that can be opened from the outside and that provides access to the interior of the building.
11. Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet from fire department access roads as measured by an approved route around the exterior of the building or facility. This distance may be increased to 450 feet where NFPA 13, NFPA 13D or NFPA 13R sprinkler systems are provided as appropriate.
12. Fire department access roads shall have an unobstructed width of not less than 20 feet and a vertical clearance of not less than 13 feet 6 inches.
13. Dead-end fire department access roads in excess of 150 feet in length shall be provided with approved provisions for the fire apparatus to turn around.
14. Bridges shall be designed in accordance with nationally recognized standards and bridges shall be designed for a live load sufficient to carry the imposed loads of fire apparatus.
15. The developer shall submit CAD drawings demonstrating all fire department access roads comply with the minimum turn radius of the fire apparatus. For turns, the minimum inside radius is 32 feet; the minimum outside radius is 45 feet.



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16. Where required by the AHJ, approved signs or other approved notices shall be provided and maintained to identify fire department access roads or to prohibit the obstruction thereof or both.